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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q61520

**RECEIVED**

Nobuhiko TSUDA, et al.

OCT 01 2002

Appln. No.: 09/674,249

Group Art Unit: 1711

**TC 1700**

Confirmation No.: 5228

Examiner: D. Truong

Filed: October 2, 2001

For: FLUORINE-CONTAINING COPOLYMER HAVING FUNCTIONAL GROUP

**RESPONSE UNDER 37 C.F.R. § 1.111**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Responsive to the outstanding Office Action of June 27, 2002, please consider applicants' remarks as follows:

Preliminarily, applicants respectfully request the Examiner to return initialed Form PTO-1449 for the Information Disclosure Statement filed January 4, 2002. An extra copy of Form PTO-1449 is attached hereto for the Examiner's convenience.

Additionally, applicants note that the Examiner lined-out references JP 7-18002 and JP 8-41131 submitted in the Information Disclosure Statement filed October 30, 2000. It is respectfully submitted that the Examiner should make these references of record because they are listed in the International Search Report for International Application No. PCT/JP99/02183 filed together with the Information Disclosure Statement of October 30, 2000, indicating in English the degree of relevance found by the foreign office. Nevertheless, applicants resubmit

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herewith an English-language abstract of each of the references along with Form PTO-1449, and request the Examiner to consider and make these references of record.

Review and reconsideration on the merits is requested.

Claims 1-4 were rejected under 35 U.S.C. § 102(b) as being anticipated by JP 1-103670 ('670). The Examiner cited JP '670 as disclosing a fluorinated copolymer substantially as claimed, having a fluorine content of not less than 10% by weight and low solubility in THF.

Applicants respectfully traverse for the following reasons.

As claimed in claim 1, the invention is directed to a fluorine-containing copolymer having a functional group. The copolymer contains a hydrocarbon vinyl compound unit having a functional group and a tetrafluoroethylene unit. Additionally, the copolymer has a fluorine content of not less than 10% by weight and is insoluble in tetrahydrofuran substantially.

An English language abstract of JP '670 is attached hereto for the Examiner's convenience.

As clearly seen from the Abstract, the fluorine-containing copolymer (A) of JP '670 relied upon by the Examiner is dissolved in THF (i.e., tetrahydrofuran) so as to measure its intrinsic viscosity. Clearly, the copolymer of JP '670 is not insoluble in tetrahydrofuran substantially as required by present claim 1. The present claims are not anticipated, and withdrawal of the foregoing rejection under 35 U.S.C. § 102(b) is respectfully requested.

Claims 1-4 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over JP 63-83108 (JP '108) or JP 02-34605 (JP '605).

JP '108 was cited as disclosing a fluorinated copolymer comprising TFE as the fluorinated olefin constituent and a monomer containing a hydroxyl group or an epoxy group as

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a monomer constituent containing a functional group. JP '605 was cited as disclosing a copolymer of (i) a fluoroolefin, (ii) a vinyl monomer containing a hydroxyl group, and (iii) another copolymerizable monomer, where (i) is selected from TFE and HFP. The Examiner considered that the copolymers of JP '108 and JP '605 would inherently be substantially insoluble in THF. The Examiner further considered that the limitation of fluorine content was not of patentable significance.

Applicants respectfully traverse for the following reasons.

First, applicants submit herewith a translation-in-part of pertinent portions of JP '108 and JP '605 for consideration by the Examiner.

The copolymer of JP '108 is soluble in an organic solvent as described at page 3, left upper column, line 14 to right upper column, line 1. (See attached translation-in-part). The requirement (3) "being insoluble in THF substantially" as required by present claim 1 means excellent solvent resistance. (Page 4, lines 3-5 of the present specification). Therefore, the copolymer of JP '108 does not satisfy requirement (3) and the present claims are not anticipated by JP '108.

JP '605 states that, as the organic co-solvent, "within a range where the fluoroolefin copolymer (I) cannot be dissolved, an aromatic hydrocarbon solvent, an alcoholic solvent, an ester solvent, a ketone solvent or an ether solvent may be used together". (Page 4, right upper column, lines 11-15 of the translation-in-part submitted herewith). That is, the fluoroolefin copolymer (I) of JP '605 is soluble in an ether solvent such as THF. Therefore, the copolymer of JP '605 does not satisfy requirement (3) and the present claims are not anticipated by JP '605.

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Regarding the rejection in the alternative based on obviousness, the fluorine-containing copolymer of applicants' invention which satisfies (1) to (4) has excellent adhesion to a substrate and co-extrusion property, and can be cross-linked as described in "INDUSTRIAL APPLICABILITY" at page 12 of the specification. The requirements (1) to (4) of present claim 1 are described at pages 3-5 of the specification, namely, (1) having TFE unit, (2) having a fluorine content of not less than 10% by weight, (3) being insoluble in THF substantially, and (4) having a hydrocarbon vinyl group unit having a functional group. The effects of the invention are neither taught nor suggested by the cited patent publications.

In view of the foregoing, it is respectfully submitted that claims 1-4 are patentable over JP '108 and JP '605, and withdrawal of the foregoing rejections is respectfully requested.

Withdrawal of all rejections and allowance of claims 1-4 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

Respectfully submitted,



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